

PULL TAB OF SLIDE FASTENER SLIDER AND  
METHOD OF MANUFACTURING THE SAME

Background of the Invention

5    Field of the Invention

[0001]

        This invention relates to a pull tab of a slide  
fastener slider, which is formed by injection molding a  
transparent thermoplastic resin around a core member  
10    constituted by a metallic slider body coupling member and a  
decorative member.

Description of the Related Art

[0002]

15        Japanese Utility Model Publication Sho 62-85114A  
discloses, as shown in Fig. 13, a pull tab of a slide  
fastener slider in which a hollow portion 101 is formed in  
a transparent body 103 of a pull tab, an identification tag  
105 showing a logo mark or a name is inserted into the  
20    hollow portion 101 and an opening 107 is sealed by a plug  
109.

[0003]

        Japanese Utility Model Publication Hei 6-37718B  
discloses, as shown in Fig. 14, a pull tab of a slider in  
25    which a pull 151 provided at the end of a pull body 153

formed of a metal or a hard plastic is obtained by injection molding a nonrigid plastic into a hole portion 155 provided on the pull body 153.

[0004]

5       A main object of the invention is to provide a pull tab of a slider fastener slider in which a decorative member is present in the pull tab, a thermoplastic resin through which the decorative member can be seen is injection molded around the decorative member to be  
10 covered. Thus, the decorative member can be seen through the surface of the pull tab. As a result, the pull tab which is high level from an aesthetic point of view is obtained. On the other hand, according to the pull tab shown in Fig. 13, the identification tag 105 showing logo  
15 marks is inserted into the transparent body 103 of the pull tab and sealed by the plug 109. The pull tab does not aim at a decoration and there is a problem that the fabrication of the pull tab is carried out at much expense in time and effort and cannot be carried out at once.

20   [0005]

      According to the pull tab shown in Fig. 14, the hole portion 155 is provided at the tip of the pull body 153 to form a pull attachment portion and a nonrigid plastic having sufficient flexibility and elasticity to completely  
25 fill up the hole portion 155 and to cover a whole surface

including the contour of the pull attachment portion is injection molded over the pull attachment portion to form the pull 151. As the pull tab does not aim at a decoration, there is a problem that the pull tab cannot be  
5 used to be aesthetically pleased.

### Summary of the Invention

[0006]

A first object of the invention is to provide a pull  
10 tab of a slide fastener slider wherein a decorative member having a certain size is present in the pull tab formed of a thermoplastic resin, and the decorative member includes various decorative portions and is formed by a core member integrated with a slider body coupling member, various core  
15 members are previously manufactured and stored, a core member is selected corresponding to the order of a customer and is utilized rapidly and efficiently, and a pull tab formed of a resin through which the decorative member can be seen is fabricated and supplied to the customer. In  
20 addition, a pull tab of a slide fastener slider of high quality in which the pull tab itself can be finished strongly and a coupling to a slider body can be also carried out firmly.

[0007]

25 A second object of the invention is, in addition to

the first object, to provide a pull tab of a slide fastener slider wherein the metallic core member has intermediate portion having a common sectional shape even if the decorative portions having various configurations to promptly conform to the order of a customer by injection molding rapidly and efficiently with a metal mold having the same configuration.

[0008]

A third object of the invention is, in addition to the first object, to provide a pull tab of a slide fastener slider having an intermediate portion which specifies the configuration of the slider body coupling member for connecting the decorative member to the body of the slider and can easily connect with the body of the main slider.

[0009]

A fourth object of the invention is to provide a method of manufacturing a pull tab of a slide fastener slider in which a core member having various decorative members and a slider body coupling member formed integrally is previously manufactured and stored, and the core member is easily provided and accommodated in the cavity of a metal mold in order to meet the needs of a customer even if a small number of kinds of decorative members are used in accordance with an order, and the pull tab having the decorative member which can be seen through a resin can be

manufactured rapidly and easily.

[0010]

A fifth object of the invention is, in addition to the forth object, to provide a method of manufacturing a pull tab of a slide fastener slider in which the same kind of decorative members or different kinds of decorative members are properly disposed and accommodated in several cavities provided in the metal mold and the pull tab to meet needs can rapidly and easily correspond to diversified small-quantity production.

[0011]

According to a first aspect of the invention, there is provided a pull tab of a slide fastener slider wherein a pull tab 2 of a slide fastener slider is fabricated by integrally joining, through an intermediate portion 10, a slider body coupling member 7 for coupling to a body 1 of a slider and one of various decorative members 8 for decorating the pull tab 2 to form a core member 9, the intermediate portion 10 is formed to be in a certain shape, joining the decorative member 8 which size is within a certain range to the intermediate portion 10, and covering a part of the intermediate portion 10 and the decorative member 8 with a transparent or translucent resin through which they can be seen by integrally injection molding to form the pull tab 2.

[0012]

According to a second aspect of the invention, in addition to the first aspect of the invention, the intermediate portions 10 of the slider body coupling members 7 is respectively in common sectional shape regardless of the configuration of the core members 9 and the decorative member 8 is obtained by integrally forming the core members 9 having various configurations with a metal, for example, zinc alloy or aluminum alloy through die casting means.

[0013]

According to a third aspect of the invention, in addition to the first aspect of the invention, the slider body coupling member 7 of the pull tab 2 is formed by protruding a U-shaped arm 11 from the plate-shaped intermediate portion 10.

[0014]

According to a fourth aspect of the invention, in addition to the first aspect of the invention, the slider body coupling member 7 of the pull tab 2 is formed by protruding a pair of left and right arms 11 from the plate-shaped intermediate portion 10 and disposing a shaft portion 12 on tips of the arms 11.

[0015]

According to a fifth aspect of the invention, there

is provided a method of manufacturing a pull tab 2 of a slide fastener slider having the steps of forming a core member 9 in one piece by metal die casting means, which is configured as to connect various decorative members 8 having sizes within a certain range to a slider body coupling member 7 through an intermediate portion 10 being in a certain common shape, selecting any of various core members 9 which are formed and stored according to an order, disposing and accommodating the selected core members 9 in several cavities 26 being in a certain shape which provided in a metal mold 20, and thereafter covering a part of the intermediate portion 10 and whole surroundings of the decorative member 8 of the core member 9 with a transparent or translucent resin through which the part of the intermediate portion 10 and the decorative member 8 can be seen to form the pull tab 2 by injection molding means.

[0016]

According to a sixth aspect of the invention, the core members 9 having the decorative members 8 of which patterns are the same kind are disposed in several cavities 26 provided in the metal mold 20 and a thermoplastic resin is then molded by the injection molding means.

[0017]

According to a seventh aspect of the invention, the

core members 9 having the decorative members 8 of which patterns are different kinds are disposed in several cavities 26 provided in the metal mold 20 and the thermoplastic resin is then molded by the injection molding means.

#### Brief Description of the Drawings

Fig. 1 is an exploded perspective view showing a slider to which a pull tab having a pair of arms is attached;

Fig. 2 is a side view showing the slider;

Fig. 3 is a front view showing the pull tab of the slider;

Fig. 4 is a sectional view taken along a line A - A in the pull tab of the slider;

Fig. 5 is an exploded perspective view showing a slider to which a pull tab having a U-shaped arm is attached;

Fig. 6 is a front view showing a variant of the pull tab;

Fig. 7 is a front view showing another variant of the pull tab;

Fig. 8 is a front view showing a further variant of the pull tab;

Fig. 9 is a front view showing an upper mold in a



metal mold;

Fig. 10 is a side view showing the upper mold;

Fig. 11 is a front view showing a lower mold in the metal mold;

5 Fig. 12 is a side view showing the lower mold;

Fig. 13 is an exploded perspective view showing a well-known pull tab; and

Fig. 14 is a front view showing another well-known pull tab.

10

#### Detailed Description of the Preferred Embodiments

[0018]

A pull tab of a slide fastener slider according to a embodiment of the invention will be concretely described below with reference to the drawings.

[0019]

As shown in Figs. 1 to 4, a pull tab of a slide fastener slider according to the invention relates to a pull tab 2 to be coupled to a clasper 4, which is provided in a slider body 1, for coupling with the pull tab 2. As shown in Figs. 3 and 4, the pull tab 2 has a slider body coupling member 7 at one end. The slider body coupling member 7 has a pair of arms 11 protruded on the left and right of a plate-shaped intermediate portion 10. A shaft portion 12 to be couple to the clasper 4 is provided on the

tip of the arm 11. A strut portion 14 is connected to the intermediate portion 10 of the slider body coupling member 7. The strut portion 14 has a decorative portion 15 having various patterns, for example, hollow arrowhead patterns.

5 The strut portion 14 and the decorative portion 15 form a decorative member 8 as a whole, which has a size within a certain range. The slider body coupling member 7 and the decorative member 8 are integrally coupled to form a core member 9.

10 [0020]

The core member 9 obtained by coupling the slider body coupling member 7 and the decorative member 8 is formed by die casting with a metal such as zinc alloy or aluminum alloy. A part of the intermediate portion 10 and  
15 whole surroundings of decorative member 8 of the core member 9 are covered by a colorless and transparent or translucent, or colored transparent or translucent thermoplastic resin through which a part of the connecting member 10 and the decorative member 8 can be seen, for  
20 example, polyamide, polyacetal, polypropylene or polybutylene terephthalate, with injection molding means with to integrally fabricate the pull tab 2. As shown in Figs. 1 and 2, the pull tab 2 will be coupled to the slider body 1 by inserting and fixing the shaft portion 12  
25 provided on the slider body coupling member 7 of the pull

tab 2 to a hook portion 5 of the clamper 4 provided with a pull attachment portion 3 protruded from the upper surface of the slider body 1. A U-shaped spring piece 6 is attached to the base portion of the hook portion 5 in the opening part of the hook portion 5 and the shaft portion 12 inserted in the hook portion 5 is sealed with the tip of the spring piece 6 to block the slip-off of the shaft portion 12.

[0021]

As shown in Figs. 5 and 6, another type of the slider body coupling member 7, a slider body coupling member 7a has a U-shaped arm 11a protruded from one end of the plate-shaped intermediate portion 10 and the strut portion 14a or 14b provided at the other end of the plate-shaped intermediate portion 10. A core member 9b in which a decorative portion 15b decorated with a petal pattern and having a size within a certain range is formed on the strut portion 14a or 14b is formed by die casting. Thereafter, a thermoplastic resin through which a part of the intermediate portion 10 and the whole decorative member 8a or 8b can be seen is injection molded therearound to cover the core member 9b so that the pull tab 2a or 2b is fabricated. In the pull tab 2a or 2b thus fabricated, as shown in Fig. 5, the U-shaped arm 11a is inserted from an opening on the rear side of the pull attachment portion 3a

protruded from the upper surface of the slider body 1a and the opening portion is pressurized to prevent the U-shaped arm 11a of the intermediate portion 10 from slipping off from the pull attachment portion 3a.

5 [0022]

There are many variants related to the decorative portion 15 of the decorative member 8 of the pull tab 2. However, the decorative member 8 is formed in a size within a certain range, that is, predetermined dimensions of a  
10 length, a width and a thickness, and the intermediate portion 10 is formed in a shape of a plate and in a certain and common sectional shape. The strut portion 14 of the decorative member 8 is connected to the intermediate portion 10 and the decorative portion 15 having various  
15 patterns are additionally provided on the strut portion 14, then the core member 9 is formed by the die casting. A large number of core members 9 having various shapes can be provided identically and accommodated in a cavity 26 of a kind of a metal mold 20. Thus, it is possible to fabricate  
20 the pull tab 2 capable of seeing the beautiful decorative member 8 which can be injection molded, has no run-out and does not generate burrs under the same conditions. The sectional shape is a shape crossed in the direction orthogonal to the direction from the slider body coupling  
25 member 7 to the decorative member 8.

[0023]

According to the pull tab 2c shown in Fig. 7, the intermediate portion 10 of the slider body coupling member 7 has a pair of arms 11 protruded on the left and right and the strut portion 14c is connected to the intermediate portion 10 having the shaft portion 12 provided on the tips of the arms 11, and the core member 9c having the strut portion 14c provided additionally with the decorative portion 15c decorated with a crescent and a star is subjected to the die casting, and the injection molding is carried out around a part of the intermediate portion 10 and the whole decoration member 8c to be covered by using a thermoplastic resin through which they can be seen. Thus, the pull tab 2c is fabricated. An example of the use of the pull tab 2c is intended for the same slider body as the slider body 1 shown in Figs. 1 and 2.

[0024]

According to the pull tab 2d shown in Fig. 8, the U-shaped arm 11a is protruded from the plate-shaped intermediate portion 10 of the slider body coupling member 7a and a disc and an annular ring to function as the strut portion 14d which is to be provided on the other end of the intermediate portion 10 are connected and the decorative member 15d is continuously provided, and the core member 9d thus obtained is subjected to the die casting. Then, the

injection molding is carried out by using, around a part of the connecting member 10 and the whole decorative member 8d to be covered, a thermoplastic resin through which they can be seen. Thus, the pull tab 2d is fabricated. An example  
5 of the use of the pull tab 2d is intended for the same slider body as the slider body 1a shown in Fig. 5.

[0025]

Next, a method of manufacturing the pull tab of a slide fastener slider according to the invention will be  
10 described. In the slider pull tab 2 of a slide fastener slider according to the invention, various kinds of core members 9 obtained by joining the slider body coupling members 7 and the decorative members 8 are at first formed by the die casting with a metal such as zinc alloy or  
15 aluminum alloy. All of the decorative members 8 of the formed core members 9 have sizes within a certain range, and the intermediate portion 10 is also in plate-shape to have a certain thickness and width. The core members 9 having various types of patterns are subjected to the  
20 injection molding by using the metal mold 20 which can be used in common. Thus, the pull tab 2 having a good appearance without burrs on a product can be fabricated.

[0026]

As shown in Figs. 9 to 12, the metal mold 20 has an  
25 upper mold 21 and a lower mold 22 which are provided with a

cavity 26 having a shape as to conform to the outside shape of the pull tab 2. The core members 9 constituted by the slider body coupling member 7 and the decorative member 8 are provided in the cavity 26 and a molten thermoplastic resin is flowed into the cavity 26 through a spool 23, a runner 24 and a gate 25 to mold. The characteristic of the invention is the following. The core members 9 having various kinds of patterns are previously formed by the die casting with zinc alloy, aluminum alloy or the like to produce and be stored. Any of the stored core members 9 is selected according to the needs of a customer and is disposed and accommodated in the cavity 26 provided in one metal mold 20, and a resin is then subjected to the injection molding. Consequently, it allows the small-quantity production of various pull tabs 2.

[0027]

For the diversified small-quantity production of the pull tab 2, the decorative members 8 having various decorative portions 15 are formed to have sizes within a certain range, and furthermore, the size and shape of the intermediate portion 10 for joining the slider body coupling member 7 to the decorative member 8 are set to be common in various core members 9. In such a manner, the same kind of core members 9 can be disposed and accommodated in the cavity 26 provided in one metal mold 20

to injection mold a resin. Moreover, different kinds of core members 9 can be disposed and accommodated in the cavity 26 without changing the metal mold 20, thereby carrying out the injection molding. Furthermore, the core members 9 of which type is different are disposed and accommodated in several cavities 26 provided in the metal mold 20 respectively to injection mold, so that the pull tabs 2 having different decorative portions 15 can also be fabricated at once. In Figs. 11 and 12, 27 denotes a groove portion for inserting and fixing a jig to hold the core member 9 disposed in the cavity 26 into a normal position.

[0028]

The pull tab of a slide fastener slider and the method of manufacturing the pull tab of the embodiment according to the invention have the structure described above. By this structure, the following advantages can be obtained.

[0029]

According to the first aspect, the pull tab 2 is formed by integrally, through an intermediate portion 10, a slider body coupling member 7 and one of various decorative members 8 to form a core member 9, the intermediate portion 10 is formed in a certain shape to join with the decorative member 8 having a size within a certain range, and a part



of the intermediate portion 10 and the decorative member 8 are covered by a resin through which they can be seen. Consequently, the intermediate portion 10 is in a certain shape and the decorative member 8 has a size within a certain range. Therefore, the cavity 26 in the metal mold 20 do not need various kinds of shapes and various core members 9 can be accommodated in a kind of cavity 26 to injection mold, so that the cost of the metal mold can be reduced. Moreover, there is such an advantage that various decorative pull tab to meet the needs of a customer can be manufactured rapidly, and furthermore, it is possible to form the pull tab 2 having a good appearance through which the decorative portion 15 can be seen.

[0030]

According to the second aspect of the invention, in addition to the advantage of the first aspect of the invention, the intermediate portion 10 of the slider body coupling member 7 has a common sectional shape and the decorative member 8 is obtained by forming the core members 9 to be various configured through metal die casting. Consequently, it is possible to readily form, by the die casting, a core member 9 which can easily be utilized. In addition, the core member 9 has a kind of shape in which the sectional shape of the intermediate portion 10 is common even if various decorative members 8 are formed.

Therefore, it is not necessary to provide several kinds of cavities 26 of the metal mold 20. Thus, it is possible to obtain such an advantage that the pull tab 2 having various kinds of decorative portions 15 can be produced rapidly, efficiently and easily by a kind of cavity 26 to conform to the order of a customer.

[0031]

According to the third and fourth aspects of the invention, in addition to the advantage of the first aspect of the invention, the slider body coupling member 7 is formed by protruding a U-shaped arm 11 the intermediate portion 10 which is plate-shaped or the slider body coupling member 7 has a pair of left and right arms 11a protruded from the intermediate portion 10 which is plate-shaped and a shaft portion 12 is provided on tips of the arms 11a. Consequently, there is such an advantage that it is possible to finish a pull tab 2 which can easily be applied to the pull attachment portion 3 of sliders 1 having almost all configurations, for example, a free slider and a slider having an automatic shut-down device.

[0032]

According to the fifth aspect of the invention, the method of manufacturing the pull tab has the steps of forming a core member 9 by joining various decorative members 8 having sizes within a certain range to a slider

body coupling member 7 through an intermediate portion 10 being in a certain shape, selecting any of various cores members 9 based on an order, accommodating the core member 9 in a cavity 26 having a certain shape provided in a metal mold 20, and then injection molding a resin through which a part of the intermediate portion 10 and the decorative member 8 of the core member 9 can be seen in order to cover them. Consequently, various core members can easily be manufactured and stored in advance. Accordingly, the core member 9 can easily be disposed in the metal mold 20 corresponding to the order of a customer so that the pull tab 2 formed of a resin can be manufactured rapidly. In addition, there is such an advantage that it is possible to manufacture a beautiful pull tab in which a core member can easily be provided on the inside to see through a decorative portion.

[0033]

According to the sixth and seventh aspects of the invention, in addition to the advantage of the fifth aspect of the invention, several cavities 26 are provided in the metal mold 20, and the core members 9 having the decorative members 8 having the same kind of patterns are accommodated in the cavities 26 and a resin is then injection molded, and the core members 9 having the decorative members 8 having different kinds of patterns are accommodated in the

cavities 26 and the resin is then injection molded.  
Consequently, there is such an advantage that pull tabs  
having the same kind of patterns or different kinds of  
patterns can be fabricated precisely and rapidly  
5 irrespective of a quantity. Thus, the advantages obtained  
by the invention are very remarkable.